CLAIMS

What is claimed is:

1. A self guiding cover assembly for a vacuum electron device (VED) enclosure, said cover assembly comprising:

a cover having a top, a sidewall, an inside and an outside, at least one electrical connector disposed on the inside of said cover for mating with a VED;

a pair of guide plates disposed on opposite sides of said outside of said sidewall of said cover, said pair of guide plates each having a track; and

a pair of guide elements mounted on opposite sides of said outside of said sidewall of said cover, said pair of guide elements each mating with said track.

2. The cover assembly of claim 1, wherein said pair of guide elements is a pair of shafts.

3. The cover assembly of claim 2, wherein said pair of shafts each is round.

4. The cover assembly of claim 1, wherein said track is generally L-shaped.

5. The cover assembly of claim 1, wherein said track is a slot through said pair of guide plates.

6. The cover assembly of claim 1, further comprising an interlock, said interlock interrupting power to said current connection when said cover is not in a closed position.

7. The cover assembly of claim 4, further comprising a notch in said track, said notch accepting one of said pair of shafts for locking said cover while in an open position.

8. The cover assembly of claim 1, further comprising a slip plate disposed between each of said pair of guide plates and said outside of said sidewall of said cover.

9. The cover assembly of claim 8, further comprising a flanged bearing on each of said two shafts for reinforcing the contact between each of said two guide plates and said vertical surface.

10. The cover assembly of claim 1, further comprising an automated device system for moving said cover along said track.

11. The cover assembly according to claim 1 further comprising a breach lock mechanism for seating a vacuum electron device (VED) into the VED enclosure having a base, said mechanism comprising:

a plurality of guide elements mounted on the VED;

a first sleeve mounted on the base removably receiving the VED, said first sleeve having a plurality of vertical slots for mating with said plurality of guide elements; and

a second sleeve mounted on the base removably receiving said first sleeve, said second sleeve rotating around said first sleeve, said second sleeve having a plurality of

tracks for mating with said plurality of guide elements, said sleeve rotation pulling the VED into the base for seating the VED;

12. The cover assembly according to claim 11 wherein said plurality of guide elements are pins.

13. The cover assembly according to claim 11 wherein said plurality of track further comprises a plurality of slanted slots having an opening a middle portion and a terminus, said opening removably receiving said mating guide element, said middle portion declining away from said opening, said terminus having a notch for seating said plurality of guide elements;

14. The cover assembly according to claim 11 further comprising a handle mounted on said sleeve for rotating said sleeve.

15. A self guiding cover assembly for a vacuum electron device (VED) enclosure, said cover assembly comprising:

a cover having a top, a sidewall, an inside and an outside, at least one electrical connector for mating with a VED mounted on the inside of said top of said cover;

means for aligning said cover onto the VED; and

means for supporting said cover when said cover is in an opened position.

16. The self-guiding cover assembly as in claim 15 further comprising means for interrupting power to said current connection when said cover is not in a closed position.

17. The self-guiding cover assembly as in claim 15 further comprising means for preventing galling, binding, and cocking between said cover and said means for properly aligning.

18. A breach lock mechanism for seating a vacuum electron device (VED) into the VED enclosure having a base, said mechanism comprising:

a plurality of guide elements mounted on the VED;

a first sleeve mounted on the base removably receiving the VED, said first sleeve having a plurality of vertical slots for mating with said plurality of guide elements; and

a second sleeve mounted on the base removably receiving said first sleeve, said second sleeve rotating around said first sleeve, said second sleeve having a plurality of tracks for mating with said plurality of guide elements, said sleeve rotation pulling the VED into the base for seating the VED;

19. The mechanism according to claim 18 wherein said plurality of guide elements are pins.

20. The mechanism according to claim 18 wherein said plurality of track further comprises a plurality of slanted slots having an opening a middle portion and a terminus, said opening removably receiving said mating guide element, said middle portion declining away from said opening, said terminus having a notch for seating said plurality of guide elements.

21. The mechanism according to claim 18 further comprising a handle mounted on said sleeve for rotating said sleeve.

22. A breach lock mechanism for seating a vacuum electron device (VED) into a VED enclosure having a base, said mechanism comprising:

a plurality of guide elements mounted on the VED;

a first sleeve mounted on the base removably receiving the VED, said first sleeve having a plurality of vertical slots for mating with said plurality of guide elements;

a second sleeve mounted on the base removably receiving said first sleeve, said second sleeve rotating around said first sleeve, said second sleeve having a plurality of tracks for mating with said plurality of guide elements, said sleeve rotation pulling the VED into the base for seating the VED;

means for locking the VED into the VED enclosure when said sleeve rotates from a first position to a second position about the VED enclosure; and

means for rotating said sleeve from said first position to said second position.

23. A radio frequency (RF) isolation system for a vacuum electron device (VED) enclosure, said VED having a first end and an emitter region and an exterior surface, said first end having a high voltage connection, said system comprising:

a cover, said cover having a first compartment and a second compartment, said first compartment forming a portion of an enclosure for the VED, said second compartment enclosing the high voltage circuit for the VED;

an enclosure wall, said enclosure wall on the interior of said enclosure for the VED; and

a plate, said plate dividing the enclosure for the VED, said plate having a first surface defining an outer perimeter, said plate having a second surface defining an opening in the plate, said second surface having continuous contact with said exterior surface of the VED in an area between said first end and said emitter region, said first surface having continuous contact with said enclosure wall.

24. The system according to claim 23, wherein the plate is formed of a conductive material, said system further comprising:

a groove in said first surface, said groove continuing completely around the outer perimeter of said plate;

a finger stock, said finger stock formed of a conductive material, said finger stock located in said groove, said finger stock forming a continuous contact between said enclosure wall and said outer perimeter of said plate; and

a sponge cord, said sponge cord located within said finger stock.

25. The system as in claim 23 further comprising means for sealing said cover and providing ground contact when said cover is in a closed position.

26. A cover assembly for a vacuum electron device (VED) enclosure, said cover assembly comprising:

a first compartment, said first compartment forming a portion of an enclosure for the VED, said first compartment having a first air passageway communicating between the inside of the enclosure for the VED and a first external air connection;

a second compartment, said second compartment enclosing the high voltage circuit for the VED, said second compartment having a second air passageway communicating between the inside of said second compartment and a second external air connection; and

a waveguide beyond cutoff panel separating said first compartment and said second compartment.

27. The cover assembly according to claim 19, wherein said panel allows for air flow while minimizing the amount of radio frequency entering said second compartment.

28. A cover assembly for a vacuum electron device (VED) enclosure, said cover assembly comprising:

a first compartment, said first compartment forming a portion of an enclosure for the VED, said first compartment having a first air passageway communicating between the inside of the enclosure for the VED and a first external air connection;

a second compartment, said second compartment enclosing the high voltage circuit for the VED, said second compartment having a second air passageway communicating between the inside of said second compartment and a second external air connection; and

means for separating said first compartment and said second compartment, said means for separating allowing for air flow while minimizing the amount of radio frequency entering said second compartment.

29. A high voltage direct current connection to a vacuum electron device (VED), said connection comprising:

an outer cathode line, said outer cathode line comprising a first hollow cylinder formed of a conductive material, said first hollow cylinder having a VED connection end;

a contact block, said contact block removably positioned within said outer cathode line, said contact block having an inner cathode contact, a heater contact, and a vacuum ion pump contact, said contact block further having a first threaded stem extending towards said VED connection end of said outer cathode line;

an inner cathode line, said inner cathode line comprising a second hollow cylinder formed of a conductive material and a support plate, said second hollow cylinder having a VED connection end and a support plate end, said second hollow cylinder removably positioned within said first hollow cylinder and having no contact with said first hollow cylinder, and support plate positioned transversely inside of said second hollow cylinder near said support plate end, said support plate having an opening removably receiving said first threaded stem; and

a heater contact line, said heater contact line comprising a third hollow cylinder formed of a conductive material, said third hollow cylinder having a threaded end and a VED connection end and having a flange on its exterior, said threaded end removably coupling with said first threaded stem whereby said heater contact line contacts said heater contact, said flange contacts said support plate and said inner cathode line is held in position against said contact block.

30. The high voltage direct current connection wherein said vacuum ion pump contact is located at the end of said first threaded stem.

31. The high voltage direct current connection wherein said heater contact line has threads near said VED connection, said threads for applying torque to said heater contact line using a tool.